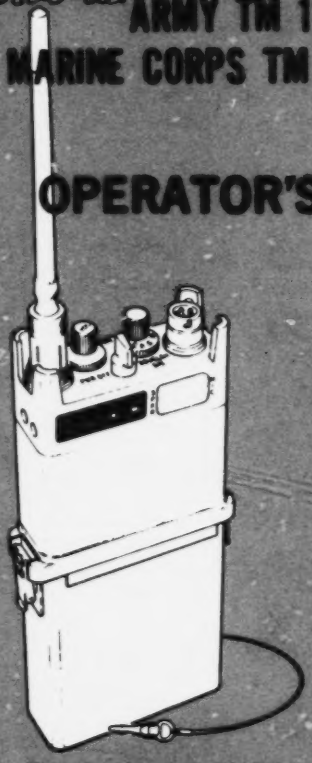
11-5820-882-10

ARMY TM 11-5820-882-10
MARINE CORPS TM 06827A-10/1

OPERATOR'S MANUAL



EQUIPMENT DESCRIPTION Page 7

PMCS CHART Page 21

OPERATING PROCEDURES Page 22

RADIO SET AN/PRC-68

(NSN 5820-01-079-9260)

JULY 1980

D 101.11:

READEX FICHE best copy available

HOW TO USE THIS MANUAL

This is a quick reference manual that has been written just for you. Become familiar with its contents so that you will be able to find what you need quickly.

This manual will show you how to:

- OPERATE
- MAINTAIN

YOUR RADIO SET AN/PRC-68

It is small enough to fit in your pocket so you can always have it ready for quick reference. After you have had some time to use it, take a moment to let us know what you think about it.

TECHNICAL MANUAL
No. 11-5820-882-10 (Army)
No. 06827A-10/1 (Marine Corps)

Headquarters, Department of the Army
Headquarters, U.S. Marine Corps
Washington, D.C., 28 July 1980

OPERATOR'S MANUAL
RADIO SET AN/PRC-68
NSN 5820-01-079-9260

REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures please let us know. Mail your letter or DA Form 2028 directly to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, New Jersey 07703. Marine Corps Units should submit NAVMC 10772. A reply will be furnished to you.

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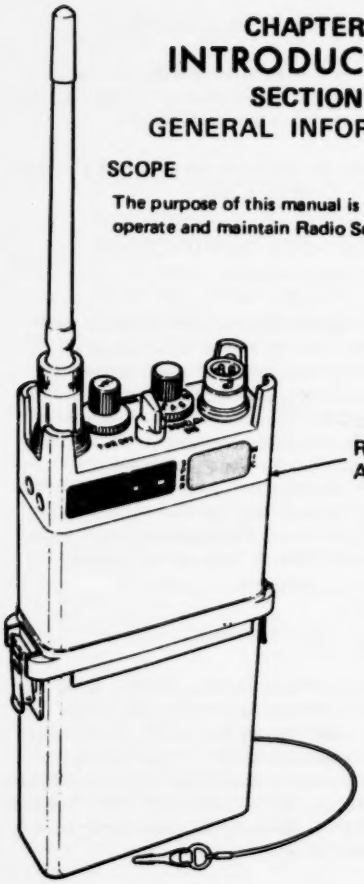
CHAPTER 1
INTRODUCTION
SECTION I
GENERAL INFORMATION

SCOPE

The purpose of this manual is to tell you how to operate and maintain Radio Set AN/PRC-68.



MAINTENANCE FORMS AND RECORDS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, the Army Maintenance Management System (TAMMS).

Marine Corps Units should refer to current edition of TM 4700-15/1.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

EIR's can and must be submitted by anyone who is aware of an unsatisfactory condition with the equipment design or use. It is not necessary to show a new design or list a better way to perform a procedure, just simply tell why the design is unfavorable or why a procedure is difficult. EIR's may be submitted on Standard Form (SF) 368, Quality Deficiency Report. Mail directly to Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, New Jersey 07703. For Marine Corps Units, forward to Commanding General, Marine Corps Logistics Base (P840), Albany, Georgia 31704. A reply will be furnished directly to you.

HAND RECEIPTS

Hand receipts for Components of End Item (COEI), Basic Issue Items (BII), and Additional Authorized List (AAL) items are published in Hand Receipt Manual TM 11-5820-882-10-HR. This manual is published to aid in property accountability and is available through: Commander, US Army Adjutant General Publications Center, ATTN: AGDL-OD, 1655 Woodson Road, St. Louis, MO 63114. Marine Corps Units should refer to current edition of TM 4700-15/1.

SECTION II
EQUIPMENT DESCRIPTION

PURPOSE AND USE OF RADIO SET AN/PRC-68

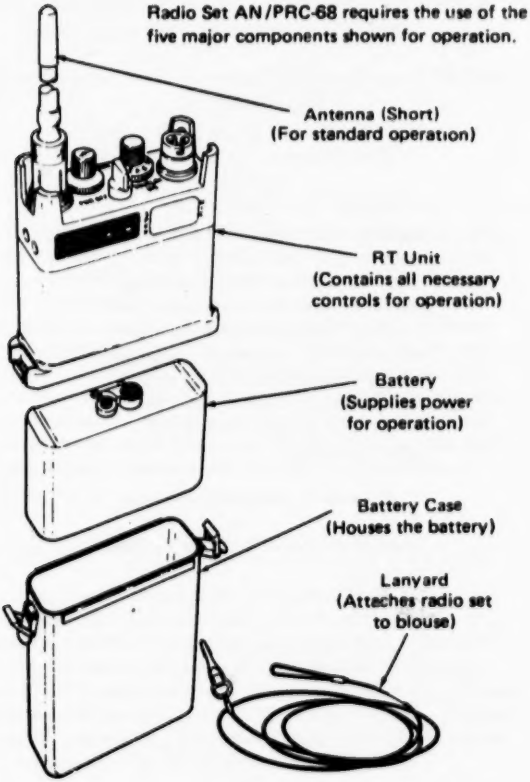
Radio Set AN/PRC-68 is a hand-held receiver-transmitter that provides two-way radio telephone communications. When used with the proper equipment, it has the capability of also providing secure speech operation. Radio Set AN/PRC-68 can be used with the following items:

Antenna AT-892/PRC-25 (long)

Handset H-138/U, H-189/U, H-250/U

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

Radio Set AN/PRC-68 requires the use of the five major components shown for operation.



PERFORMANCE DATA

Power output . . . . . .1 watt

Frequency range . . . . . 30.00 megahertz (MHz) to 79.95 MHz

Available channels 1000

Preset channels 10

Type of modulation . . . . . .frequency modulation (fm)

Operating distance

(With short antenna) . . . . . 330 yards (300 meters)

(With long antenna). . . . . 1 mile (1.6 km)

Temperature range . . . . . -40 degrees F (-40 degrees C) to +150 degrees F (+65 degrees C)

Watertightness. . to a depth of approximately 3 feet (.91 meters)

Weight (Including battery and short antenna, no handset). . . . . .46 oz (1.30 kg)

Size . . . . . .8.35 in (212.0 mm) x 3.80 in (96.0 mm) x 1.52 in (38.6 mm)

CHAPTER 2
OPERATING INSTRUCTIONS
SECTION I
DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND CONNECTORS

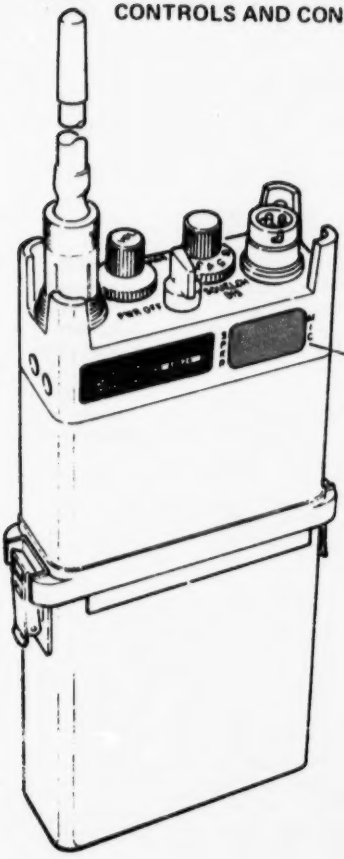
GENERAL

You should not attempt to operate Radio Set AN/PRC-68 until you fully understand the operation and function of the controls and connectors. The normal operating procedures are given in Section III of this Chapter.

CONTROLS AND CONNECTORS

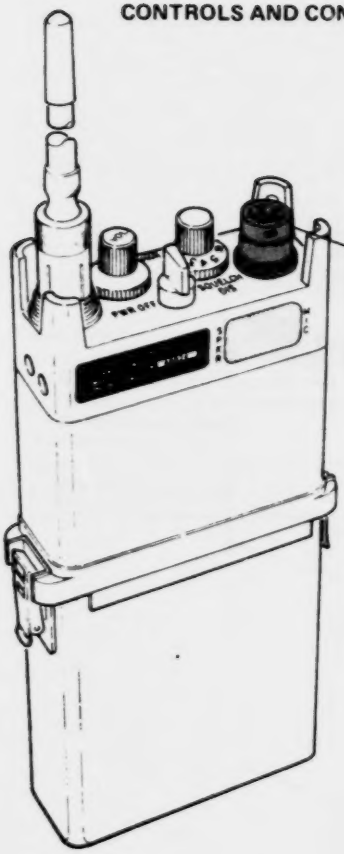
The following illustrations show you where the controls and connectors are located and what they are used for.

CONTROLS AND CONNECTORS (CONT)



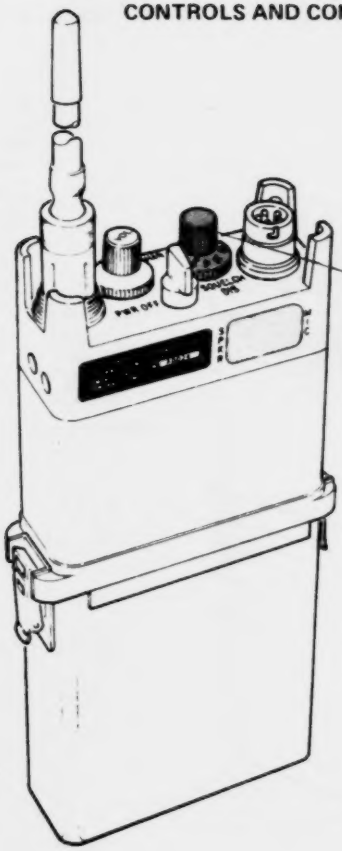
SPKR/MIC built-in speaker-microphone for use without handset

CONTROLS AND CONNECTORS (CONT)



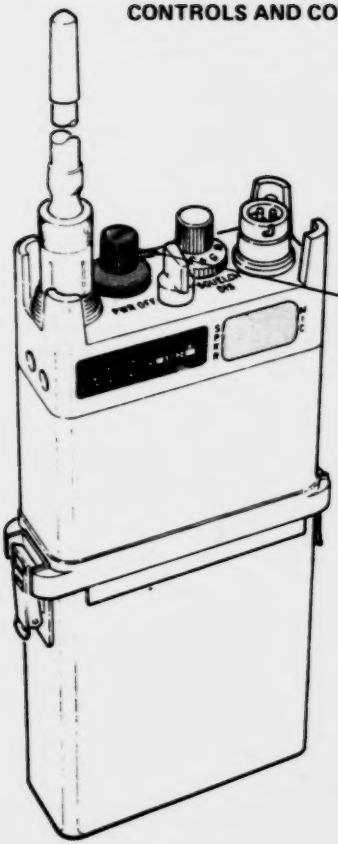
AUDIO connector standard handset may be used instead of built-in speaker-microphone

CONTROLS AND CONNECTORS (CONT)

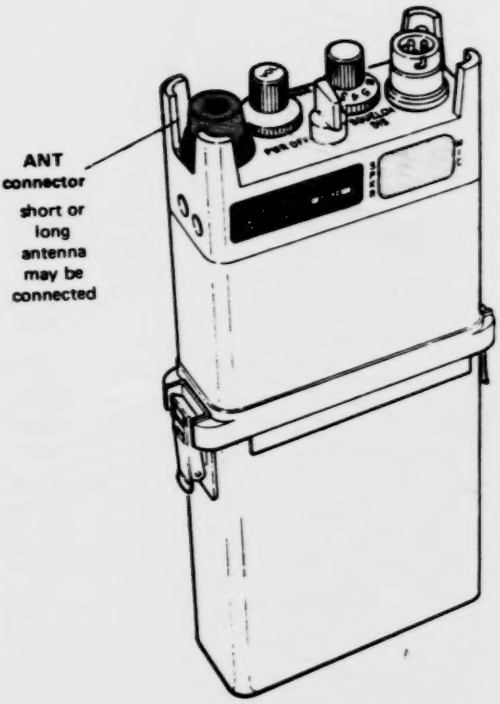


CHAN switch choice of 0 thru 9 preset operating channels

CONTROLS AND CONNECTORS (CONT)



CONTROLS AND CONNECTORS (CONT)



CONTROLS AND CONNECTORS (CONT)

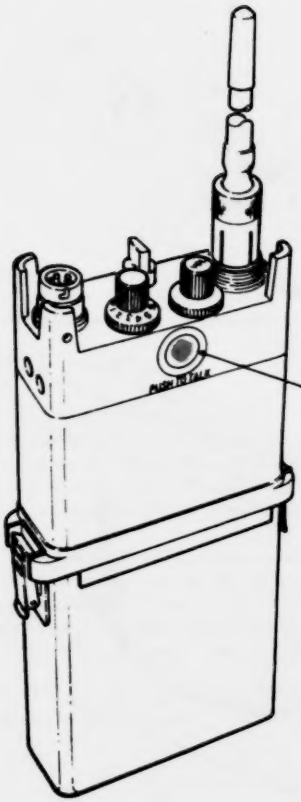
PWR switch

OFF
radio set is off

ON
radio set is on and squelch is on

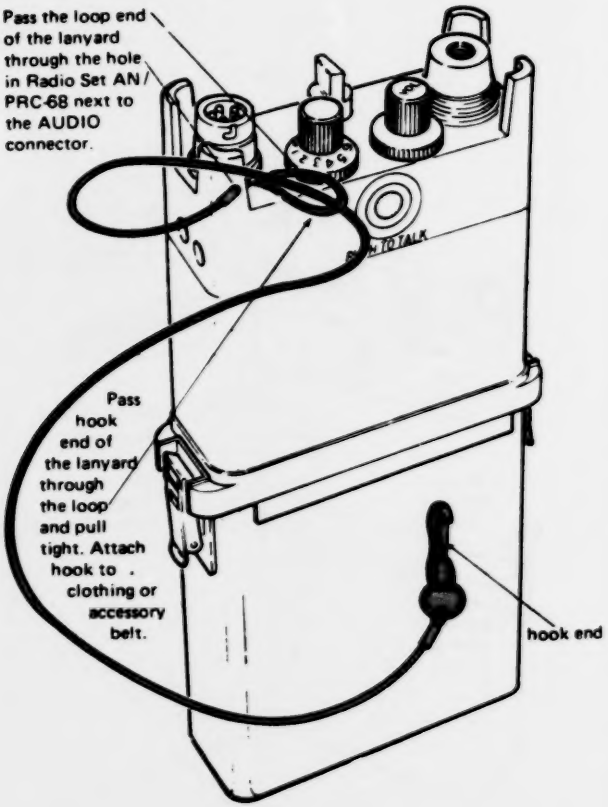
SQUELCH DIS
radio set is on and squelch is off

CONTROLS AND CONNECTORS (CONT)



PUSH TO TALK allows you to transmit when pressed

ATTACHING THE LANYARD


Pass the loop end of the lanyard through the hole in Radio Set AN/PRC-68 next to the AUDIO connector.
Pass hook end of the lanyard through the loop and pull tight. Attach hook to clothing or accessory belt.
hook end

SECTION II
PREVENTIVE MAINTENANCE CHECKS AND SERVICES

GENERAL

To be sure that your Radio Set AN/PRC-68 is always ready for your mission, you must do regular Preventive Maintenance Checks and Services (PMCS) as listed in the PMCS chart. Routine checks like cleaning, dusting, washing, covering unused receptacles, and checking for loose hardware are not listed as PMCS checks. They are things that you should do anytime you see they must be done. If you find a routine check like one of those listed above in your PMCS chart, it was listed because other operators reported problems with this item.

PMCS CHART

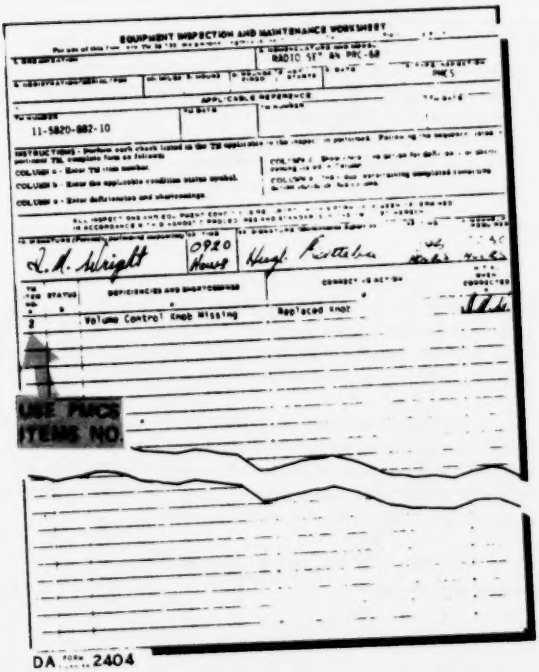
a. The ITEM NO. column lists the number to be used for the TM ITEM NO. column of DA Form 2404 (Equipment Inspection and Maintenance Worksheet) when you fill out the form. A sample DA Form 2404 is shown on page 20. Marine Corps Units should refer to current edition of TM 4700-15/1.

b. The INTERVAL column is subdivided into a B column (PMCS that should be performed **Before** operation to make sure your equipment is ready to go) and a D column (PMCS that should be performed **During** operation that will help you spot small troubles before they become big problems).

c. The ITEM TO BE INSPECTED column tells you exactly what to inspect.

d. The PROCEDURES – CHECK AND HAVE REPAIRED OR ADJUSTED AS NECESSARY column tells you what to check for.

e. The FOR READINESS REPORTING EQUIPMENT IS NOT READY/AVAILABLE IF column lists the conditions under which the equipment will not be ready for use.


EQUIPMENT INSPECTION AND MAINTENANCE WORKSHEET

RADIO SET AN PRC-68

11-5820-882-10

0920 Hours

2 | Volume Control Knob Missing | Replaced knob

USE PMCS ITEMS NO.

DA FORM 2404

OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

ITEM NO.	INTERVAL B	INTERVAL D	ITEM TO BE INSPECTED	PROCEDURES CHECK AND HAVE REPAIRED OR ADJUSTED AS NECESSARY	FOR READINESS REPORTING EQUIPMENT IS NOT READY/AVAILABLE IF:
1	●		Antenna	Check that antenna is not broken and is firmly secured.	Antenna is broken or missing.
2	●		Operating controls	Check that controls are not missing or loose on shaft and that they operate smoothly without binding.	Operating controls are missing or binding.
3	●		Operating channel	Make sure unit is set to proper operating channel.	Set to wrong channel.
4		●	Basic operation	With unit turned on and set to the assigned channel, communicate with a distant station.	Distant station cannot hear you or you cannot hear distant station.

B-Before
D-During

Any Radio Set AN/PRC-68 that does not pass the PMCS should be returned to organizational maintenance.

SECTION III
OPERATION
UNDER USUAL CONDITIONS

OPERATING PROCEDURES

To operate Radio Set AN/PRC-68, perform the following step-by-step procedures.

a. Set the CHAN switch to the proper operating channel (squad leader will tell you the channel to use).

b. Set the PWR switch to ON. To turn off squelch, turn switch to SQUELCH DIS and hold; it will automatically return to ON when you release it.

c. Adjust the VOL control to set the loudness of the received signal.

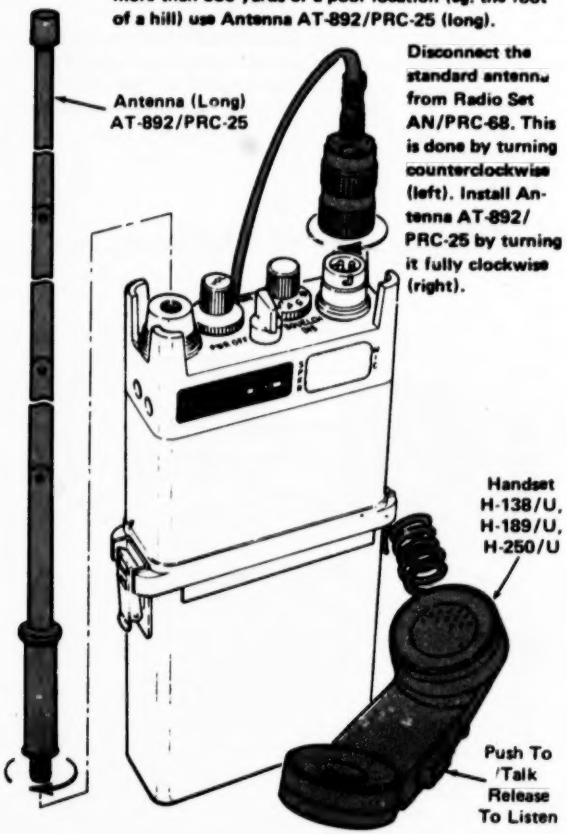
d. Push the PUSH TO TALK switch and speak into the SPKR/MIC to transmit; release the switch to listen.

e. To turn off Radio Set AN/PRC-68, set the PWR switch to OFF.

OPERATION OF ADDITIONAL EQUIPMENT

To operate Radio Set AN/PRC-68 with a standard handset (H-138/U, H-189/U, or H-250/U), connect the handset to the AUDIO connector. This is done by lining up the keyway (groove) of the handset connector with the keyway of the AUDIO connector and pressing down firmly. Lock the connector by turning it fully clockwise (right). When this is done, the SPKR/MIC is disconnected. Set the PWR switch to ON and use the push-to-talk switch on the handset to operate.

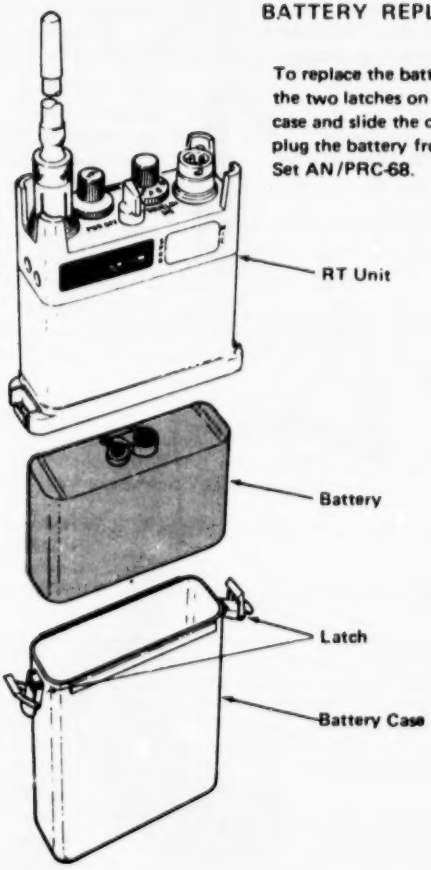
To operate the Radio Set AN/PRC-68 at a distance of more than 330 yards or a poor location (eg. the foot of a hill) use Antenna AT-892/PRC-25 (long).



Disconnect the standard antenna from Radio Set AN/PRC-68. This is done by turning counterclockwise (left). Install Antenna AT-892/PRC-25 by turning it fully clockwise (right).

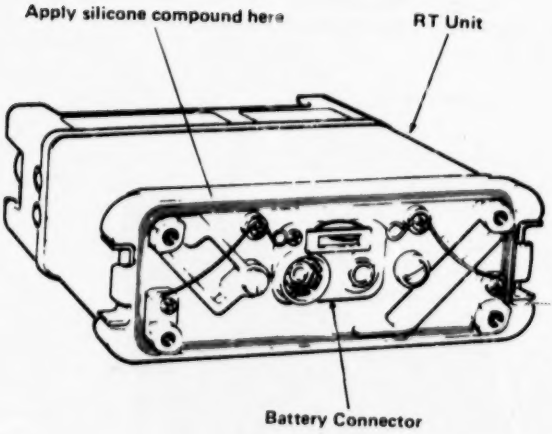
BATTERY REPLACEMENT

To replace the battery, release the two latches on the battery case and slide the case off. Unplug the battery from the Radio Set AN/PRC-68.



BATTERY REPLACEMENT (CONT)

Apply a thin coat of silicone compound to the rubber gasket on the bottom of the RT unit. Plug new battery into mating connector on the RT unit. Replace battery cover and snap latches shut.



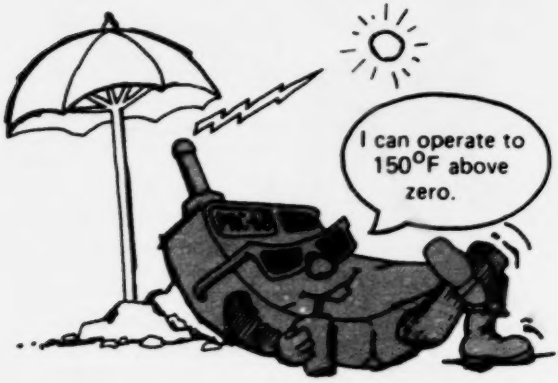
SECTION IV
OPERATION UNDER UNUSUAL CONDITIONS

OPERATION AT LOW TEMPERATURES

Radio Set AN/PRC-68 can operate to 40 degrees Fahrenheit (40 degrees Centigrade) below zero, however, you must keep the operating controls and connectors free of ice. The same holds true for the antenna as ice on the antenna will reduce or distort the signal. The battery should be kept as warm as possible.

OPERATION AT HIGH TEMPERATURES

Radio Set AN/PRC-68 can operate to 150 degrees Fahrenheit (65 degrees Centigrade) above zero. However, in hot, dry climates, the connectors and operating controls are subject to damage from dust and dirt. When not in use, keep the connectors covered. Keep the operating controls as dust and dirt free as possible. Constant exposure to the sun could cause damage so try to keep the equipment out of the sun as much as possible.



OPERATION IN TROPICAL CLIMATES

In warm, damp climates, the equipment is subject to damage from moisture and fungi. Wipe all moisture and fungi from the equipment with a dry, lint-free cloth. Should Radio Set AN/PRC-68 happen to fall into water, remember that it is watertight to a depth of about three feet.

OPERATION DURING JAMMING

A common jamming procedure is the transmission of a strong or annoying signal on your operating channel, making it difficult or impossible for you to maintain communications. Sometimes this signal may be from a friendly station. It is also possible that the unusual noise or interference may be due to a bad Radio Set AN/PRC-68. To check it out, do the following:

a. Disconnect the antenna.

b. Short out the antenna connector on the radio with available material (eg, wire or long antenna).

> **CAUTION**
>
> Do not key transmitter with antenna connector shorted out.

c. If you still have noise or interference, you have a bad Radio Set AN/PRC-68; if the noise or interference goes away, you are being jammed and should be reported as soon as possible.

One or more of the following antijamming procedures may allow you to continue operating Radio Set AN/PRC-68:

a. Try to use a nearby obstruction as a screen. Position yourself so that the obstruction acts as a screen between the radio and the possible source of interference.

b. Point your radio in the direction of the distant station you are communicating with; try several positions.

c. Change the setting of the VOL control. This may raise the level of the desired signal enough to be heard over the jamming signal.

d. If none of the above works, get permission to change to another channel.

CHAPTER 3

MAINTENANCE INSTRUCTIONS

SECTION I
LUBRICATION INSTRUCTIONS

Radio Set AN/PRC-68 does not require any lubrication.

SECTION II
TROUBLESHOOTING PROCEDURES

Other than replacing a suspected defective battery (page 24), no operator troubleshooting is authorized for Radio Set AN/PRC-68. Any trouble detected by you is to be reported to organizational maintenance personnel.

SECTION III
MAINTENANCE PROCEDURES

Operator maintenance of Radio Set AN/PRC-68 is limited to keeping it as clean as possible at all times. Use a clean, lint-free cloth to do this.

APPENDIX A
REFERENCES

Scope

This appendix lists the forms and publications that are referenced in this manual or that contain information applicable to the operation and maintenance of Radio Set AN/PRC-68.

FORMS

DA Form 2028	Recommended Changes to Equipment Technical Manuals
NAVMC 10772 (USMC)	Suggested Recommendations and Improvements for Marine Corps Technical Manuals
DA Form 2404	Equipment Inspection and Maintenance Worksheet
Standard Form 368	Quality Deficiency Report
TM 4700 - 15/1 (USMC)	Forms and Records Procedures

PUBLICATIONS

SL1-2 (USMC)	Index of Publications to Authorized Equipment
DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders
SB11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies and Equipment Used by the Army
TM 11-5965-257-15	Operator's, Organizational, Direct Support, General Support and Depot Maintenance Manual Including Repair Parts and Special Tools Lists: Handset H-138/U
TM 11-5965-280-15	Operator's, Organizational, DS, GS, and Depot Maintenance Manual Including Repair Parts and Special Tools Lists: Handset H-189/U

TM 38-750	The Army Maintenance Management System (TAMMS)
TM 11-5820-882-10-HR	Hand Receipt Manual Covering the End Item/Components of End Item (COEI), Basic Issue Items (BII), and Additional Authorization List (AAL) Related to: Radio Set AN/PRC-68 (NSN 5820-01-079-9260)

APPENDIX B
COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS
Section I. INTRODUCTION

Scope

This appendix lists components of end item and basic issue items for Radio Set AN/PRC-68 to help you inventory items required for safe and efficient operation. Marine Corps Units should refer to SL3-06827A.

General

These Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. Section II. Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. Section III. Basic Issue Items. These are the minimum essential items required to place Radio Set AN/PRC-68 in operation, to operate it, and to perform emergency repairs.

Explanation of Columns

The following provides an explanation of columns found in the tabular listings:

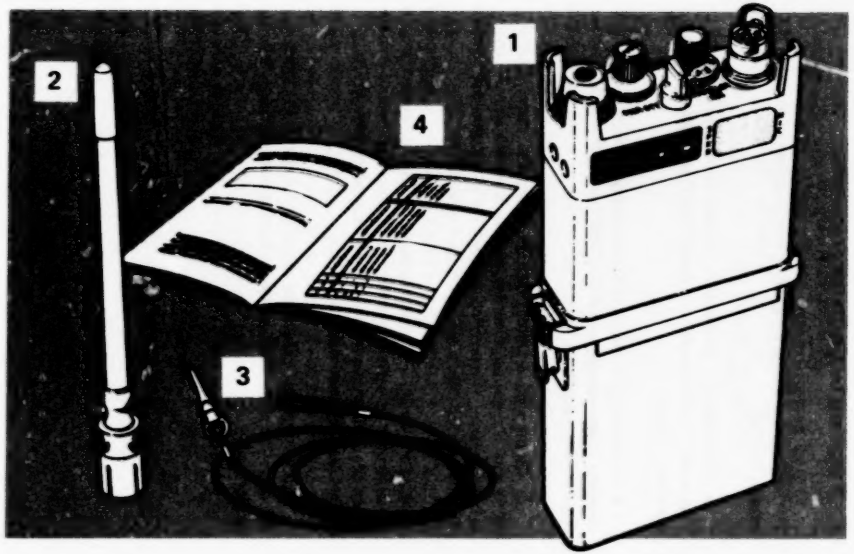
a. Column (1) – Illustration Number (Illus Number). This column indicates the number of the illustration in which the item is shown.

b. Column (2) – National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

c. Column (3) – Description. Indicates the National item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number.

d. Column (4) – Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).

e. Column (5) – Quantity required (Qty rqr). Indicates the quantity of the item authorized to be used with/on the equipment.


1
2
3
4

Section II. COMPONENTS OF END ITEM

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION FSCM AND PART NUMBER USABLE ON CODE	(4) U/M	(5) QTY RQR
1	5820-01-079-9260	Radio Set, AN/PRC-68 (37695) 705956-803	EA	1
1		RT-1113, AN/PRC-68 (37695) 705561-803	EA	1
2		Antenna, Short (37695) 914161-803	EA	1
3		Lanyard (80063) SMB523304	EA	1
4		Publication (37695) TM 11-5820-882-10 (Army) TM 06827A-10/1 (Marine Corps)	EA	1

Section III. BASIC ISSUE ITEMS

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION FSCM AND PART NUMBER	USABLE ON CODE	(4) U/M	(5) QTY RQR
	6850-00-177-5094	Battery BA-1588/V 538626-803 Silicone Compound		EA 2 oz	1 1

APPENDIX C
ADDITIONAL AUTHORIZATION LIST
Section I. INTRODUCTION

Scope

This appendix lists additional items you are authorized for the support of Radio Set AN/PRC-68.

General

This list identifies items that do not have to accompany Radio Set AN/PRC-68 and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

Explanation of Listing

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment.

Section II. ADDITIONAL AUTHORIZATION LIST

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION FSCM & PART NUMBER USABLE ON CODE	(3) U/M	(4) QTY AUTH
5820-00-889-3803	Antenna AT-892/PRC-25 (Long)	EA	1
5965-00-892-0972	Handset H-138/U or	EA	1
5965-00-069-8886	Handset H-189/U or	EA	1
5965-00-043-3463	Handset H-250/U	EA	1

APPENDIX D
DETAILED
TECHNICAL CHARACTERISTICS

General

Frequency	30.00 MHz - 79.95 MHz
Available channels	1000
Channel spacing	50 kHz
Preset channels	10
Preset channel spacing	200 kHz
Modulation	frequency modulation (fm)
Range	
Short antenna	330 yards (300 meters)
Long antenna	1 mile (1.6 kilometers)
Operating temperature range	-40°F to +150°F (-40°C to +65°C)
Weight (Including battery and antenna, no handset)	46 oz. (1.30 kg)
Size	8.35 in. (212.0 mm) x 3.80 in. (96.0 mm) x 1.52 in. (38.6 mm)

Transmitter

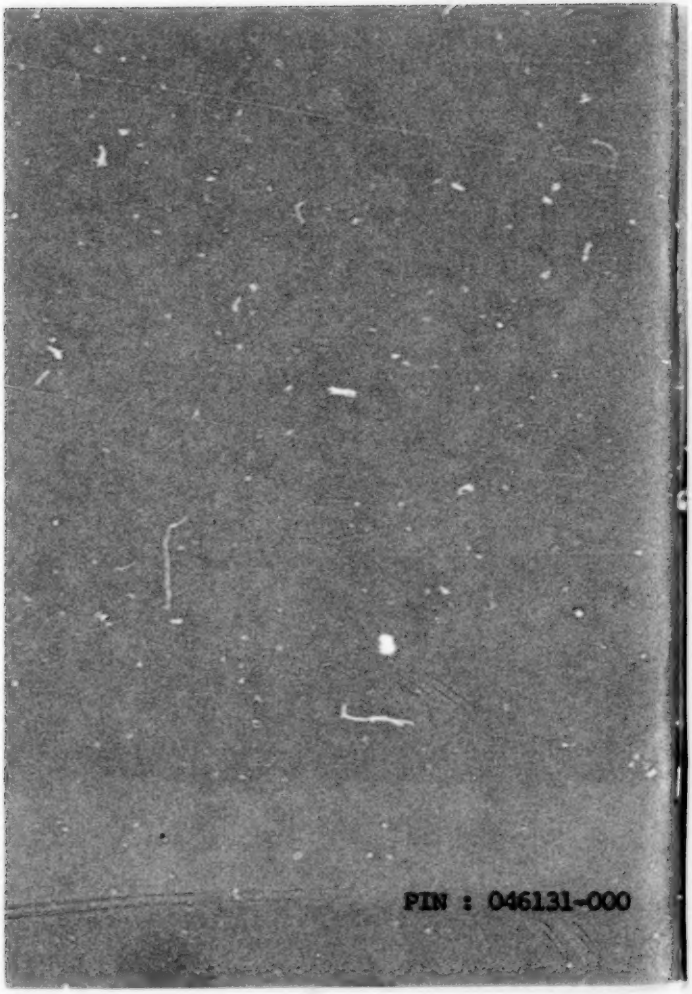
Power output	1 watt
Frequency control	built-in synthesizer
Frequency stability	±0.005 percent
Spurious and harmonics radiation	50 dB below rf carrier level
Modulation limiting	±15 kHz deviation (maximum)
Squelch tone (2.5 - 3.5 kHz deviation)	148 to 152 Hz

Receiver

Adjacent channel rejection	-60 dB
Image rejection	-40 dB
Sensitivity	0.5 μV for 10 dB SINAD*
Squelch sensitivity	0.5 μV
Selectivity:	
6 dB down	bandwidth greater than ±15 kHz
60 dB down	bandwidth less than ±50 kHz
Response to spurious signals	-60 dB
Frequency stability	±0.005 percent
Audio output	less than 10 percent distortion at 20 mW

$$*\text{SINAD} = \frac{\text{Signal + Noise + Distortion}}{\text{Noise + Distortion}}$$

☆ GPO : 1990 O - 261-872 (21019)


PIN : 046131-000